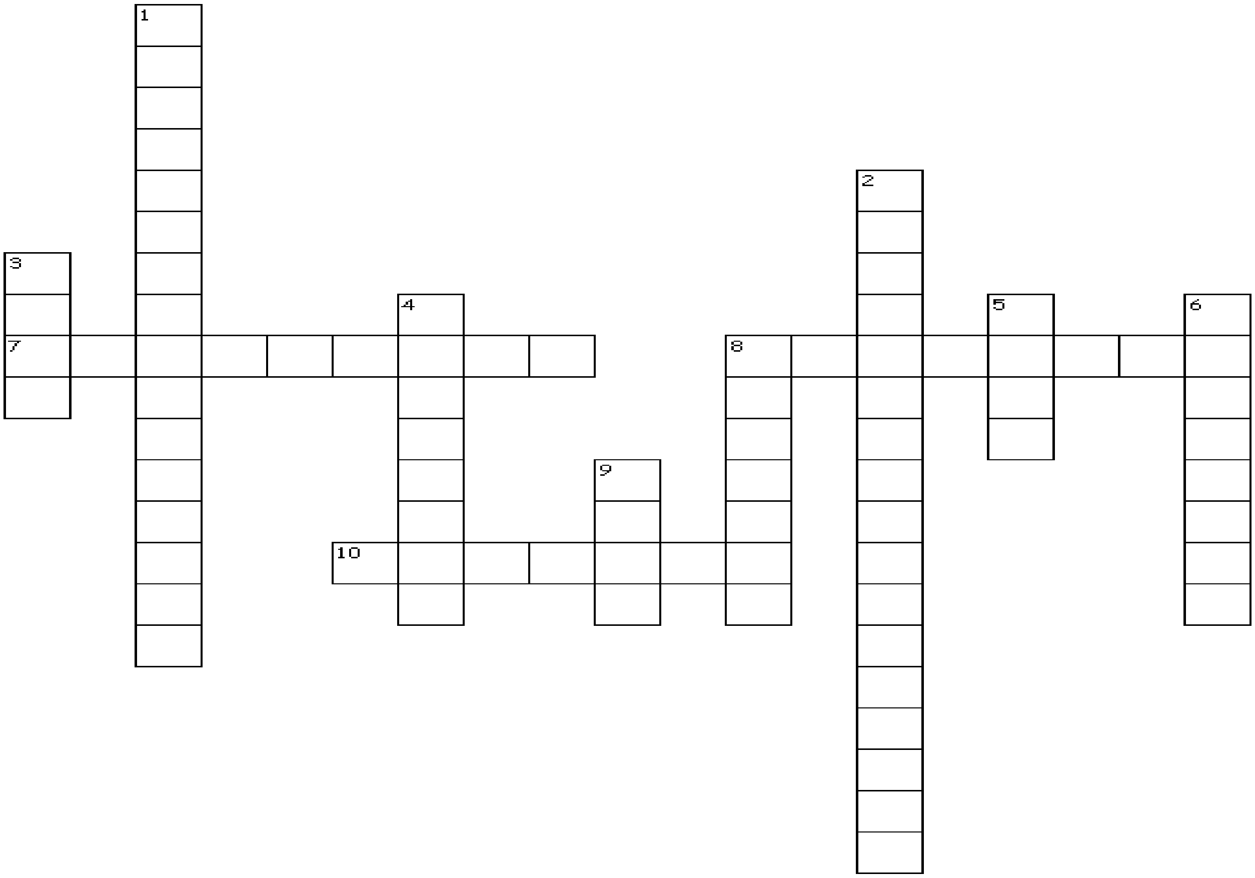
N2L review



Across

7. The air resistance force an object experiences depends on the object's speed and area.

8. For a constant force, (an) increase in the mass will result in a decrease in the acceleration.

10. Doubling the force on an object double its acceleration.

Down

1. unbalanced forces acting on an object cause the object to accelerate.

2. The acceleration of an object is directly proportional to the force and inversely proportional to the mass.

3. mass resists Acceleration.

4. Force that always acts to oppose motion. friction

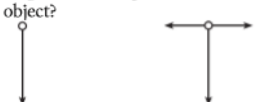
5. When an object has reached terminal velocity, the acceleration of the object is zero.

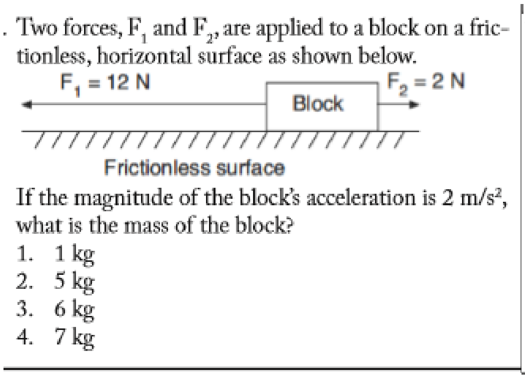
6. When a falling object has reached terminal velocity, the forces acting on it are balanced.

8. Pressure and area have a(n) inverse relationship, meaning when one goes up, the other goes down.

9. The same force applied to twice as much mass results in half the acceleration.

An object is in equilibrium. Which force vector diagram could represent the force(s) acting on the object?



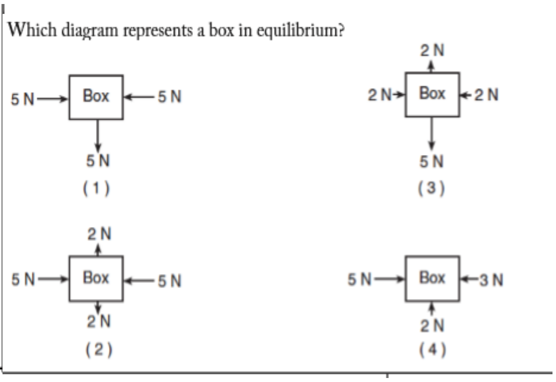


. Two forces, F_1 and F_2, are applied to a block on a frictionless, horizontal surface as shown below.

$F_1 = 12$ N
Block
$F_2 = 2$ N
Frictionless surface

If the magnitude of the block's acceleration is 2 m/s^2, what is the mass of the block?

1. 1 kg
2. 5 kg
3. 6 kg
4. 7 kg



Which diagram represents a box in equilibrium?

5 N
Box
5 N
5 N
(1)
2 N
2 N
Box
2 N
5 N
(3)
2 N
5 N
Box
5 N
2 N
(2)
5 N
Box
3 N
2 N
(4)

F = ma

P = F/A

A car has a weight of 5000 N. Each tire has a surface area of 0.4 m^2. What is the pressure on the road under **each** tire?

5000 / (.4 x 4) = 3125 N per tire

A 90 kg skydiver jumps out of a plane. He accelerates at 9.8 m/s^2. What is the downward force on his body?

90 x 9.8 = 882 N

A woman wearing high heels exerts a force of 5000 pascals on the floor. If the surface area under her shoes is 0.1 m^2, what is her weight?

5000 x .1 = 500 N

A box is pushed with a force of 520 N. The force of friction is 100 N. If the box accelerates at 3 m/s^2, what is the weight of the box?

420 = m(3)
m = 420 / 3 = 140 kg

140 kg x 9.8 m/s^2 = 1372 N